

REMARKS

I. Introduction

For the reasons set forth below, Applicants respectfully submit that all pending claims are patentable over the cited prior art references.

II. The Rejection Of Claims 1-5 Under 35 U.S.C. § 103

Claims 1-5 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Beane et al. (USP No. 5,453,293) in view of Boecker et al. (USP No. 5,624,479) and Wilks et al. (USP No. 3,926,570); and claims 1-5 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Pearlstein et al. (USP No. 3,754,939) in view of Wilks. Applicants respectfully traverse these rejections for at least the following reasons.

With regard to the present invention, claim 1 recites, in-part, a method for producing conductive particles comprising the steps of: introducing a solution composed mainly of palladium chloride and hydrochloric acid into an electroless plating bath containing a reducing agent, and one from the group consisting of particles of an organic material or particles of an inorganic material while stirring said bath; and simultaneously applying an electroless plating to the surface of said particles and allowing the palladium catalyst to be carried on the surface of said particles to give conductive particles having an electroless plate coating.

The rejection acknowledges the failure of Beane to teach that (1) the palladium catalyst is formed from a solution of palladium chloride and hydrochloric acid added to the bath while stirring the bath, (2) the order of adding ingredients to the bath, and (3) the palladium chloride concentration in the solution, (4) the resulting porous coating, and (5) the specific inorganic

material of the particles. However, the rejection alleges that Boecker and Wilks either teach the above cited limitations, or that they are obvious. In addition, the rejection also notes the failure of Pearlstein to teach that (1) the order of adding ingredients to the bath, (2) the substrate material is particles, and (3) the resulting porous coating. However, it is alleged that Wilks either teaches the above cited limitations, or that they are obvious.

The rejection admits that none of the cited prior art references teach the claimed order of adding the ingredients. Thus, in order to support the obviousness rejection, it is alleged that the order of adding ingredients to the bath is obvious because the cited references teach, when combined together, *each of the components* of the present invention, and, ***although none of the references teach the order of adding ingredients to the bath***, *In re Gibson* is cited to show that selection of any order of mixing ingredients is *prima facie* obvious.

This argument is without merit. The specification of the present invention clearly states on pages 5-6 and 9 that:

“In the method for producing conductive particles...a solution composed mainly of palladium chloride is introduced into an electroless plating bath containing particles of an organic or inorganic material to simultaneously apply an electroless plating onto the surface of the particles. It is therefore possible to eliminate the repeated process of sensitizing and activation in the present invention. ***The palladium is not always adsorbed uniformly onto the surface of the particles.*** This slightly reduces the number of active sites...degrading the continuity (re: uniformity) of the coating to be formed. By virtue of this discontinuity, the resultant coating will be porous”.

Thus, the order of addition plays a **crucial** role in the formation of the particles of the present invention, which are designed with pores to allow water and ions to pass through. This can also be seen in Fig. 1 of the present invention.

In contrast, neither of Beane, Boecker, Pearlstein nor Wilks teach the claimed order of adding the ingredients to the bath. As a result, the cited prior art method achieve a uniform coating on the particles. For example, Beane shows in Figs. 11 and 12 a uniform coating of metal on the particles with no pores mentioned, shown or suggested. Boecker teaches, in col. 4, line 66 - col. 5, line 4 that the process used “provide[s] nickel deposits of *exceptionally uniform thickness* on the contact pads, which deposits are also free of other surface imperfections...”. The phrase “exceptionally uniform thickness” does not in any way describe the porous coating of the present invention. Thus, both Beane and Boecker are directed to a method of coating particles to achieve a uniform coating, not the porous coating of the present invention. As Pearlstein teaches a method similar to Beane, it follows that Pearlstein would result in a similar uniform coating as well. Therefore, for the Examiner to suggest that the selection of any order of mixing ingredients is obvious completely ignores an important aspect of the present invention, and is incorrect in view of the designed results of the process. As such, *selection of any order of mixing ingredients is NOT obvious*, because the order of mixing the ingredients results in different properties of the particles and coatings. Accordingly, as the combination of Bean, Boecker and Wilks or of Pearlstein and Wilks does not teach or suggest each of the limitations of claim 1, Applicants respectfully request that the § 102 and 103 rejections of claim 1 be withdrawn.

Moreover, the Examiner suggests that it would be obvious to combine Beane and Boecker or Pearlstein with Wilks because Wilks teaches that “substrate particles in the bath

should be subject to constant stirring”. However, Wilks describes a method using tin similar to the comparison example of the present invention as recited on pages 11-12 of the specification. This comparison example failed to result in a coated particle without the additional steps of being treated with a sensitizer (see, Fig. 2 of the specification), and washing the particles following treatment with the palladium chloride/HCl solution, as is necessary with the prior art method (see, Wilks, col. 3, lines 48-65). In fact, the Office Action admits that the references do not disclose the resulting porosity (see page 6, lines 8-9). Thus, combining Wilks with Beane, Boecker or Pearlstein will not result in a particle of the claimed invention.

Furthermore, Wilks cannot be combined with Beane, Boecker or Pearlstein, as Wilks does not disclose the application of the coating simultaneously upon addition of the palladium chloride/HCl solution to the electroless plating bath. As such, even if the references were combined, they still do not teach each of the step of simultaneously applying an electroless plating to the surface of said particles. Accordingly, it is clear that the proposed combination of cited prior art fails to disclosed the method of the present invention.

Anticipation under 35 U.S.C. § 102 requires that each and every element of the claim be disclosed, either expressly or inherently in a prior art reference, *Akzo N.V. v. U.S. Int’l Trade Commission*, 808 F.2d 1471 (Fed. Cir. 1986). Furthermore, in order to establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 180 USPQ 580 (CCPA1974). As is clearly shown, Beane, Boecker, Pearlstein and Wilks do not disclose a method for producing conductive particles comprising the steps of: introducing a solution composed mainly of palladium chloride and hydrochloric acid into an electroless plating bath containing a reducing agent, and one from the group consisting of particles of an organic material or particles of an inorganic material while stirring said bath; and

simultaneously applying an electroless plating to the surface of said particles and allowing the palladium catalyst to be carried on the surface of said particles to give conductive particles having an electroless plate coating. Therefore, Applicants submit that Beane, Boecker, Pearlstein and Wilks do not anticipate, nor render obvious, claim 1 of the present invention and accordingly, Applicants respectfully request that the § 102(b) and § 103(a) rejections of claim 1 be withdrawn.

III. All Dependent Claims Are Allowable Because The Independent Claim From Which They Depend Is Allowable

Under Federal Circuit guidelines, a dependent claim is nonobvious if the independent claim upon which it depends is allowable because all the limitations of the independent claim are contained in the dependent claims, *Hartness International Inc. v. Simplimatic Engineering Co.*, 819 F.2d at 1100, 1108 (Fed. Cir. 1987). Accordingly, as claim 1 is patentable for the reasons set forth above, it is respectfully submitted that all pending dependent claims are also in condition for allowance.

Furthermore, with regard to claim 3 of the present invention, the Examiner alleges that since all the claimed process steps are followed, it would be an inherent result that the coated particles would have the claimed porosity, ***despite the fact that each of the prior art references disclose the exact opposite*** (a uniform coating). Thus, the pending rejection improperly combines the cited references, improperly alleges that the order of addition is obvious, and then incorrectly suggests that the resulting property of the claimed invention would be obvious although the prior art teaches the exact opposite to that which the specification of the present invention teaches. In view of the above, it appears that the combination of Beane, Boecker, Pearlstein and Wilks fails to disclose the limitations of claim 3 of the present invention.

IV. Conclusion

Having responded to all open issues set forth in the Office Action, it is respectfully submitted that all claims are in condition for allowance.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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